

BEFORE THE
Federal Communications Commission
WASHINGTON, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION

In the Matter of)
)
Rulemaking to Amend Parts 1, 2, 21, and 25 of the)
Commission's Rules to Redesignate the)
27.5-29.5 GHz Frequency band, to Reallocate)
the 29.5-30.0 GHz Frequency Band, to Establish)
Rules and Policies for Local Multipoint Distribution)
Service and for Fixed Satellite Services)

CC Docket No. 92-2977

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To: The Commission

**OPPOSITION OF TRW INC. TO
PETITION OF MOTOROLA SATELLITE COMMUNICATIONS, INC.
FOR PARTIAL RECONSIDERATION**

TRW Inc. ("TRW"), by its attorneys and pursuant to Section 1.429 of the Commission's Rules, hereby opposes the petition of Motorola Satellite Communications, Inc. ("Motorola") for partial reconsideration of the First Report and Order in the above-captioned proceeding.^{1/} In so doing, TRW acknowledges that there is some merit to one of the points raised by Motorola — i.e., as to the genesis of what

^{1/} Rulemaking to Amend Parts 1, 2, 21, and 25 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, to Reallocate the 29.5-30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services, FCC 96-311 (released July 22, 1996) ("First Report and Order"). On September 24, 1996, TRW filed a Petition for Clarification and/or Partial Reconsideration of the First Report and Order, in order to secure some revisions to Sections 25.258(b) and (d) that TRW asserts are necessary to bring the rules into conformity with the underlying sharing agreements they codify.

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is now Section 25.258(c) of the Commission's rules. The bottom line, however, is that Motorola has yet to demonstrate that the feeder links of its contemplated nongeostationary mobile-satellite service ("NGSO/MSS") system can share spectrum on a co-frequency basis with geostationary fixed-satellite service ("GSO/FSS") systems that employ small (0.66 meter) earth terminals, and it has provided no justification — other than a self-interested desire to avoid having the requirement applied to it — for the imposition of a condition on TRW's forthcoming license for NGSO/MSS feeder links in the 29/19 GHz bands that requires the maintenance of constant successive ground tracks.

As an initial matter, Motorola correctly observes that the "constant successive ground tracks" requirement of new Section 25.258(c) of the Commission's rules had no obvious antecedent in the various arrangements that were reached between and among NGSO/MSS feeder link operators and GSO/FSS applicants during the

course of this proceeding.^{2/} The rule was not one of the sharing principles agreed by TRW and GSO/FSS interests earlier this year.^{3/}

Despite the fact that the requirement for the maintenance of constant successive ground tracks first appeared in the final rules, Motorola apparently is operating under the assumption that the requirement now in Section 25.258(c) of the Commission's rules was part of the sharing arrangements.^{4/} This misapprehension on Motorola's part has led it to make a number of misstatements as to the scope and exclusivity of the sharing arrangements described in the First Report and Order and codified in Section 25.258 of the Commission's rules.^{5/}

^{2/} Insofar, however, as Motorola gratuitously suggests that the requirement was the result of some form of unreported or underreported *ex parte* communication by TRW and Hughes Communications Galaxy, Inc. ("Hughes") to the Commission, see Motorola Petition at 3 n.4, it is mistaken. TRW introduced successive ground tracks (also known as "coherent orbits") as a feature of its NGSO/MSS system during presentations at which Motorola representatives were present.

^{3/} See *Ex parte* submission filed by the International Bureau to William F. Caton (Feb. 6, 1996): *Co-Directional Frequency Sharing Between Odyssey Feeder Links and GSO/FSS Service Links in the 29.25-29.5 GHz and 19.45-19.7 GHz Bands*, at 7 (dated Feb. 5, 1996).

^{4/} See, e.g., Motorola Petition at 4.

^{5/} For example, the fact that the coherent orbits feature was not included as an element of the sharing agreement means there is no truth at all to Motorola's argument that TRW and Hughes "admit that [the nodal regression rule] cannot be used by other NGSO MSS systems to coordinate with GSO FSS systems."

(continued...)

The fact of the matter is that First Report and Order reflects a carefully constructed latticework that maximizes the opportunities for spectrum use by multiple services. Wisely, however, the Commission based its firm segmentation decisions on the cases where sharing had been shown to be practicable; even then, it did not close the door irrevocably to future demonstrations of the practicability of sharing from other services or operators.

Nowhere is this reality more apparent than it is in the 400 MHz of spectrum made available for use by NGSO/MSS feeder links at 29.1-29.5 GHz. TRW and Motorola worked out the mechanics of a sharing arrangement for their NGSO/MSS feeder link interests that would extend to whatever spectrum they were to occupy. In addition to its arrangements with Motorola, TRW worked diligently with GSO/FSS interests to hammer out the mechanics of an arrangement whereby NGSO/MSS systems of the Odyssey™ design — i.e., medium earth orbit systems with relatively few earth station complexes — can share spectrum with the 0.66 meter earth terminals proposed by most GSO/FSS applicants in a way that does not impact the capacity of either type of system. While the maintenance of constant successive ground tracks by Odyssey™ satellites is not part of that arrangement, it is true that the arrangements worked out by

^{5/}(...continued)

Motorola Petition at 4.

TRW and the GSO/FSS community would not necessarily extend to Motorola's species of NGSO/MSS system (which contemplates low-Earth orbits, low elevation angle operation, and numerous ground stations).

To the extent that Motorola's Petition can be interpreted as a complaint that the extant sharing arrangements between TRW and the GSO/FSS interests do not include its type of NGSO/MSS feeder link system, its assertions must be rejected. First of all, the arrangements themselves, while recognizing the limited scope of the case addressed therein, do not preclude any other type of system from coming in and making a demonstration that its architecture too can be accommodated.^{6/} Similarly, new Section 25.258(d) of the Commission's rules (which is the subject of a request for clarification/revision by TRW on other grounds) contemplates that NGSO/MSS feeder link systems other than Odyssey™ may make a demonstration as to sharing and thus gain access to the bands 29.25-29.5 GHz.^{7/} The fact of the matter is that, to date, Motorola and the GSO/FSS interests have been unable to arrive at an arrangement that would enable Motorola's feeder links to operate co-frequency with GSO/FSS systems

^{6/} See materials cited in note 3, *supra*.

^{7/} See *First Report and Order*, FCC 96-311, slip op. at 60 (47 C.F.R. § 25.258(d)).

employing the desired small earth terminals.^{8/} Until it can make this demonstration, the sanctity and integrity of the Commission's band plan requires that Motorola's feeder link uplink operations be limited to the band 29.1-29.25 GHz.

As a final matter, TRW must oppose Motorola's request that the requirement of Section 25.258(c) be removed from the Commission's rules and interposed as a condition on TRW's license.^{9/} Irrespective of the origin of the regulation, the reality is that the prospect for successful sharing between NGSO/MSS feeder link networks of the design of Odyssey™ and GSO/FSS networks in the band 29.25-29.5 GHz is not dependent on TRW's maintenance of constant successive ground tracks for Odyssey™. The frequency with which Odyssey™ satellites will cross through the geostationary arc is unaffected by the use of this feature. Coherent orbits

^{8/} In this respect, Paragraph 63 of the First Report and Order, which Motorola asserts is an outright prohibition on its use of the band 29.25-29.5 GHz for feeder link operations (see Motorola Petition at 2), strikes TRW as a "snapshot" statement which is based on Motorola's indication that it will be unable to share spectrum with GSO/FSS systems. As Section 25.258(d) confirms, the Commission would presumably be willing to revisit this determination under the proper circumstances.

^{9/} Contrary to Motorola's unsupported assertion, TRW has never claimed, admitted, or stated that the ability to use coherent orbits is unique to Odyssey™. See Motorola Petition at 3, 10. None of the patents issued to TRW in connection with Odyssey™ involves coherent orbits. Furthermore, and contrary to Motorola's curious suggestion (see Motorola Petition at 7 n.11), TRW has not withdrawn any of its Odyssey™-related patents.

simply have the effect of regularizing the intersections; they have no impact whatsoever on the ability of GSO/FSS operators to employ modest coordination measures (already agreed to and incorporated into the Commission's First Report and Order and associated new rules) to permit full operation of both types of systems even in cases where there are orbit intersections at occupied GSO/FSS positions.

In short, TRW did not object to the general requirement stated in Section 25.258(c), because it plans to include that feature on Odyssey™. If the Commission sees fit, however, to remove the requirement in response to Motorola's Petition, it should not take the further step of imposing maintenance of constant successive ground tracks as a condition on TRW's license.


CONCLUSION

Motorola is correct in its assertion that the requirement of new Section 25.258(c) that NGSO/MSS feeder link systems operating in the band 29.25-29.5 GHz maintain constant successive ground tracks appeared for the first time in Appendix B to the First Report and Order. Use of the feature, however, is neither unique to Odyssey™, nor essential to the other sharing principles worked out by TRW and the GSO/FSS interests (i.e., the principles now codified in the balance of Section 25.258, as proposed to be clarified in TRW's own Petition for Clarification and/or Partial Reconsideration). If Motorola can demonstrate the ability to share spectrum

simultaneously with GSO/FSS systems that employ small earth terminals and authorized NGSO/MSS feeder link systems — something it has been unable to do up to now — it should be given the opportunity to seek to access the band. Otherwise, the Commission has no choice but to limit its access to the band 29.25-29.5 GHz.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I, Katharine B. Squalls certify that a copy of the foregoing "Opposition of TRW Inc. to Petition of Motorola Satellite Communications, Inc. for Partial Reconsideration" was mailed, first-class postage prepaid, this 21st day of October, 1996 to each of the following:

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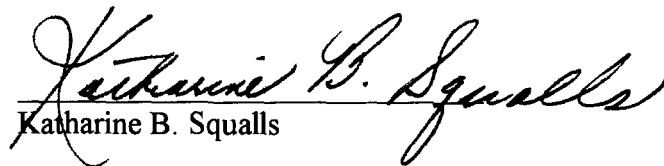
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